LECTURE 8: PROJECT INTEGRATION MANAGEMENT

- Explain the **strategic planning process**
- Understand how do organizations choose projects?
- Discover the project **integration management processes**

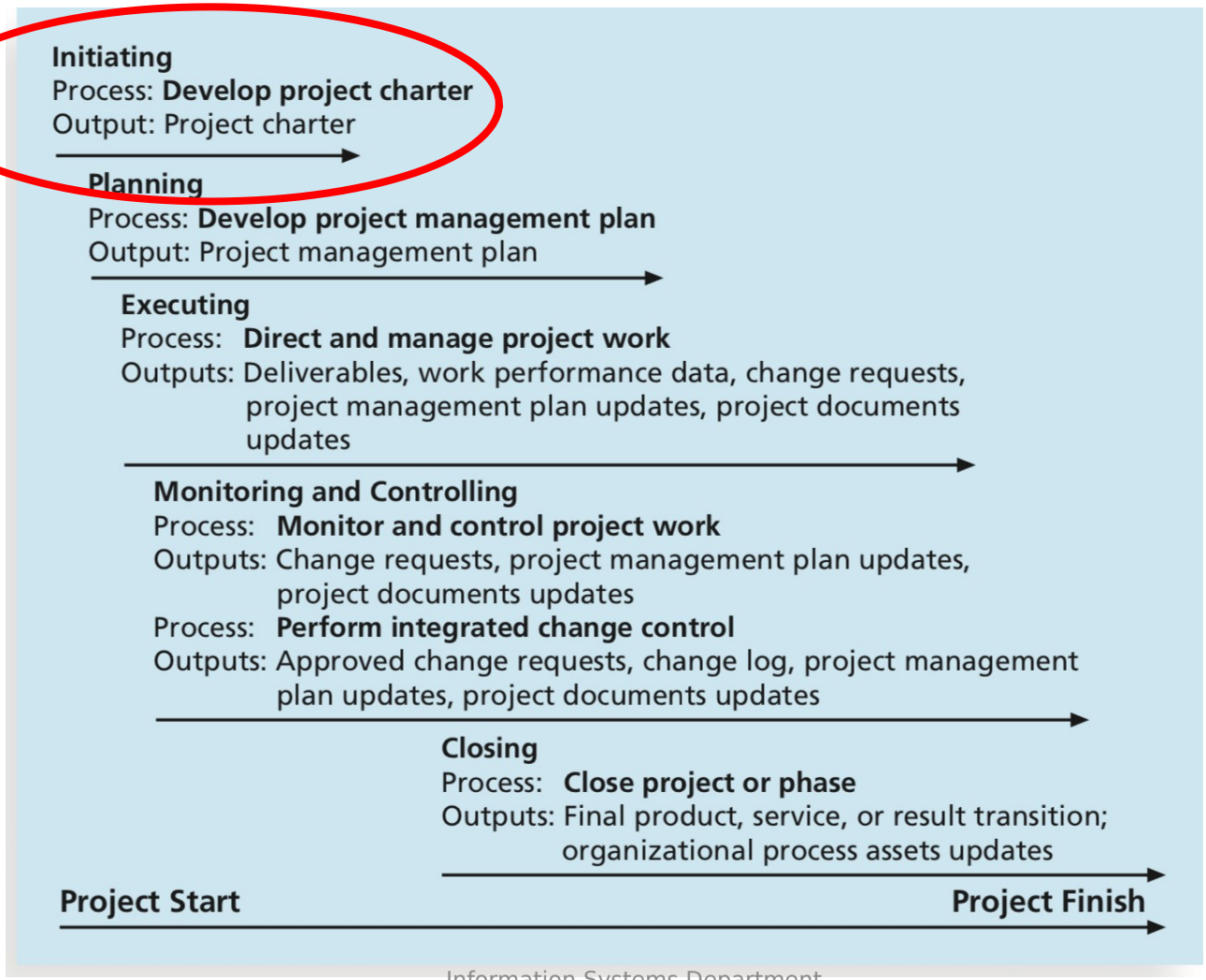
Knowledge Area	Project Management Process Groups				
	Initiating	Planning	Executing	Monitoring & Control	Closing
Project Integration Management	Develop project charter	Develop project management plan	Direct and manage project work	Monitor and control project work, perform integrated change control	Close project or phase
Project Scope Management		Plan scope management, collect requirements, define scope, create WBS		Validate scope, control scope	
Project Time Management		Plan schedule management, define activities, sequence activities, estimate activities resources, estimate activity durations, develop schedule		Control schedule	
Project Cost Management		Plan cost management, estimate costs, determine budget		Control costs	
Project Quality Management		Plan quality management	Perform quality management	Control quality	
Project Human Resource Management		Plan human resource management	Acquire project team, develop project team, manage project team		
Project Communications Management		Plan communications management	Manage communications	Control communications	
Project Risk Management		Plan risk management, identify risks, perform qualitative risk analysis, perform quantitative risk analysis, plan risk responses		Control risks	
Project Procurement Management		Plan procurement management	Conduct procurements	Control procurements	Close procurements
Project Stakeholder Management	Identify stakeholders	Plan stakeholder management	Manage stakeholder engagement	Control stakeholder engagement	

Involves coordinating all of the other project management knowledge areas throughout a project's life cycle.

The **most important** project management knowledge area

Integration consists of:

- Balancing all the processes in different knowledge areas.
- The ability of the project manager to lead the project, project team and stakeholders.
- Unify the project team approach towards achieving the projects objectives.


Initiating
Process: Develop project charter
Output: Project charter
Planning
Process: Develop project management plan
Output: Project management plan
Executing
Process: Direct and manage project work
Outputs: Deliverables, work performance data, change requests, project management plan updates, project documents updates
Monitoring and Controlling
Process: Monitor and control project work
Outputs: Change requests, project management plan updates, project documents updates
Process: Perform integrated change control
Outputs: Approved change requests, change log, project management plan updates, project documents updates
Closing
Process: Close project or phase
Outputs: Final product, service, or result transition; organizational process assets updates
Project Start
Project Finish

How does a leader select a project?

- ✓Before starting the initiation process the organization need to choose a project first.
- ✓Successful leaders look at the big picture or <u>strategic plan</u> of the organization. **WHY?**

To determine what types of projects will provide the most **VALUE**

Strategic Planning involves determining long-term objectives by analyzing

Strengths

Weaknesses

Opportunities

Threats

In the business environment, predicting future trends, and projecting the need for new products and services.

- Strategic planning provides important information to help organizations identify and then select potential projects.

- Organizations often perform a **SWOT** analysis (**S**trengths, **W**eaknesses, **O**pportunities, and **T**hreats) to aid in strategic planning.

- **SWOT** also called Internal-External analysis.

Why SWOT also called **Internal-External**

Strength and **weaknesses** → Internal in organization

Opportunities and **Threat** → External Factors

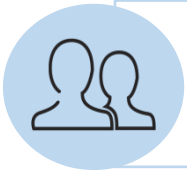
تحليل سوات
SWOT
Analysis

SWOT ANALYSIS EXAMPLE

A group of four people want to start new business in film industry. They create a **SWOT** analysis as follows:

SWOT ANALYSIS EXAMPLE

Strengths



We have numerous contact in the film industry.

Two of us have strong sales and interpersonal skills.

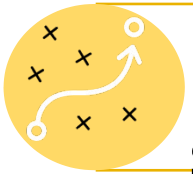
Two has strong technical skills and familiar with SW tools.

We all have impressive samples of completed projects.

SWOT ANALYSIS EXAMPLE

Weaknesses

No accounting/financial experience.



No clear marketing strategy for product and services.

Little money to invest in new projects.

No company website and limited use of technology.

SWOT ANALYSIS EXAMPLE

OPPORTUNITIES

Current client has mentioned a large project.

Film industry continues to grow.

Two major conferences this year where we could promote
our company.

SWOT ANALYSIS EXAMPLE

THREATS

- Other companies can provide services we provide.
- Customers prefer well established organization.
- High risk in film business.

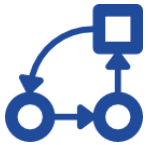
SWOT ANALYSIS EXAMPLE

Result from the SWOT :

1. Find an external accountant or firm to help run the business.

2. Hire someone to develop a company Web site, focusing on our experience and past projects.

3. Develop a marketing plan.



SWOT ANALYSIS EXAMPLE

Result from the SWOT :

4. Develop a strong proposal to get the large project the current client mentioned.

5. Plan to promote the company at two major conferences this year.

SWOT

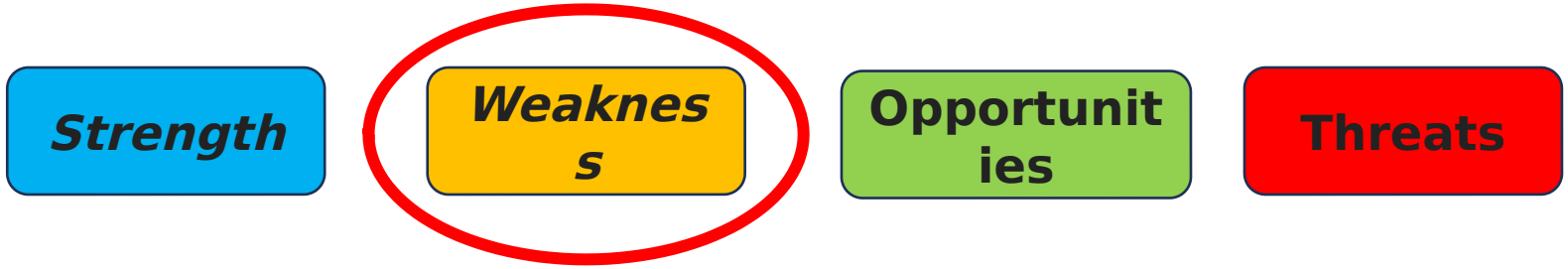
A group of people want to start a new business. Determine whether the following are strengths, weaknesses, opportunities or threats?

One competitor sells similar products and has loyal customers as well as a relationship with businesses that regularly buy from them.

Strength | ***Weaknes s*** | **Opportunit ies** | **Threats**

SWOT

Lack of reputation: they haven't established themselves as reputable others.



SWOT

Business growth: it is growing 8.5% annually.

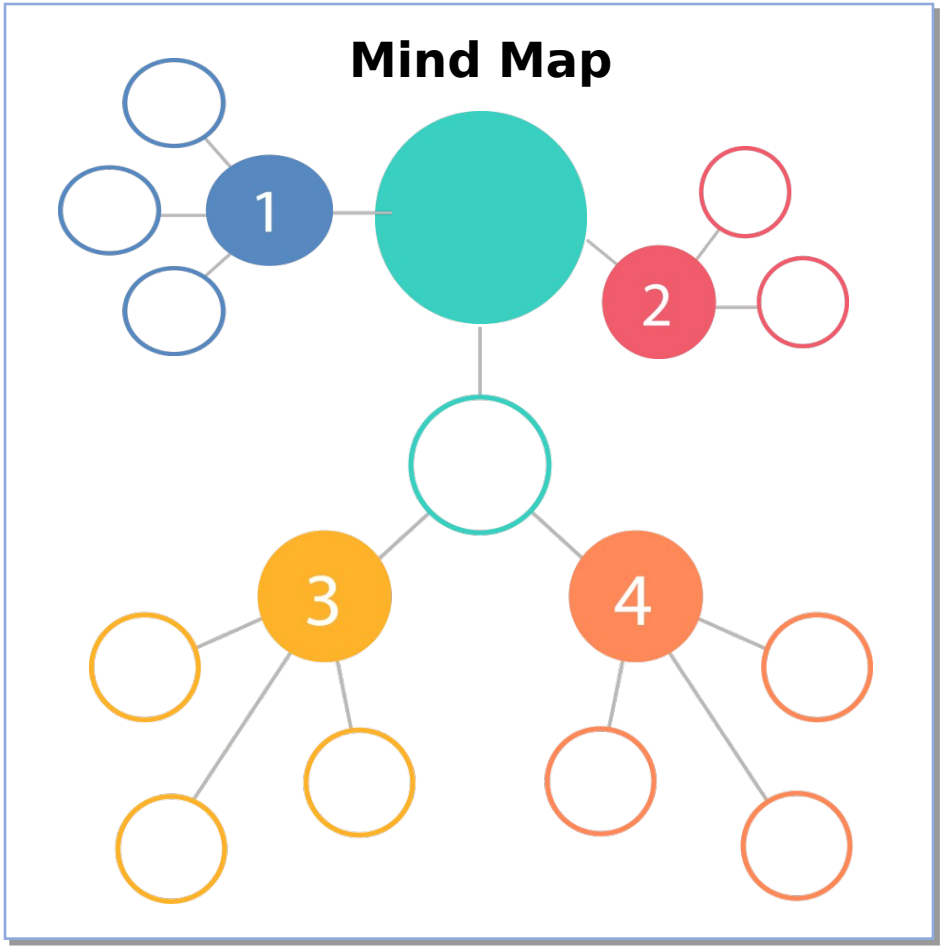
SWOT

Offer consistently high-quality product in a distinctive atmosphere.

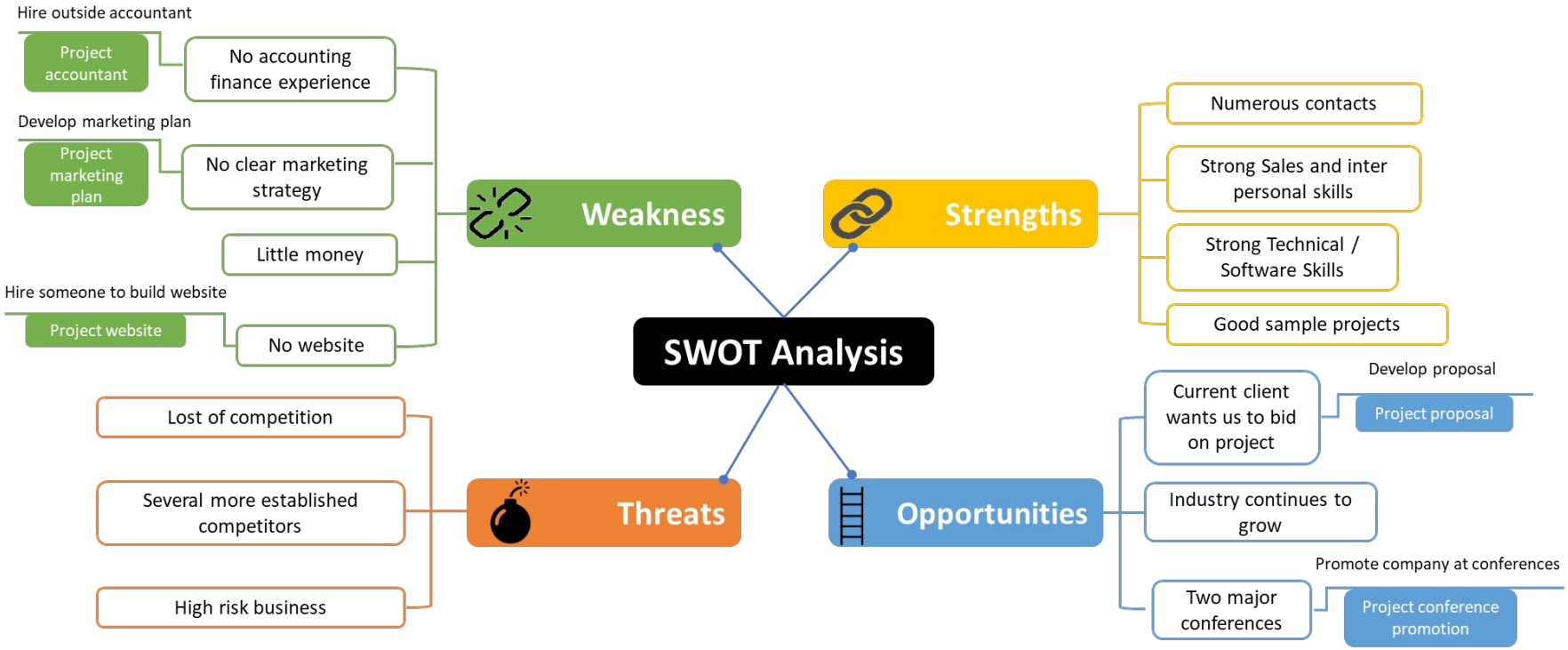
Strength ***Weaknes s*** **Opportunit ies** **Threats**

TOOLS AND TECHNIQUES

- **Mind Map:** is a technique that uses branches radiating out from a core idea to structure thoughts and ideas.
- **Mind map** helps in identify potential projects.

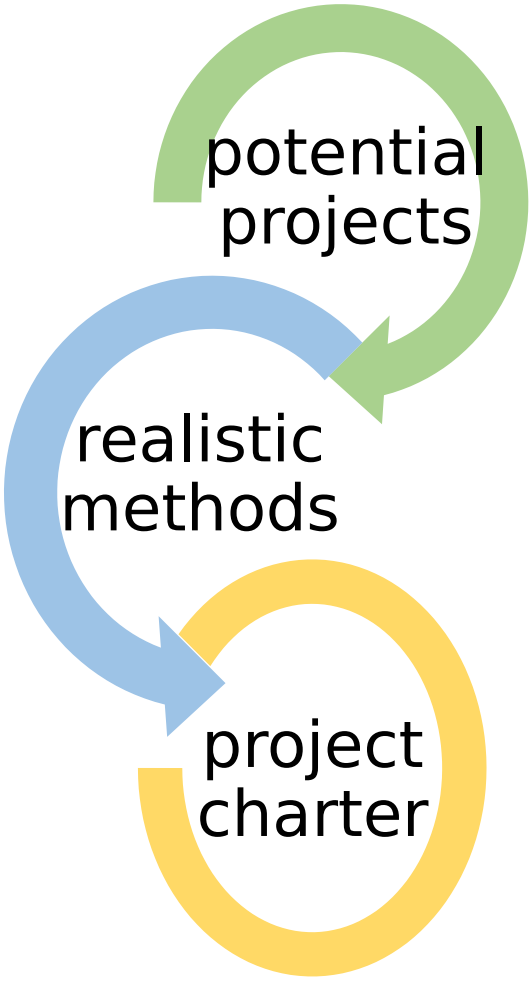


TOOLS AND TECHNIQUES



As part of strategic planning,

1. Identify **potential projects**.
2. Use **realistic methods** to select which projects to work on.
3. Formalize project initiation by issuing a **project charter**.

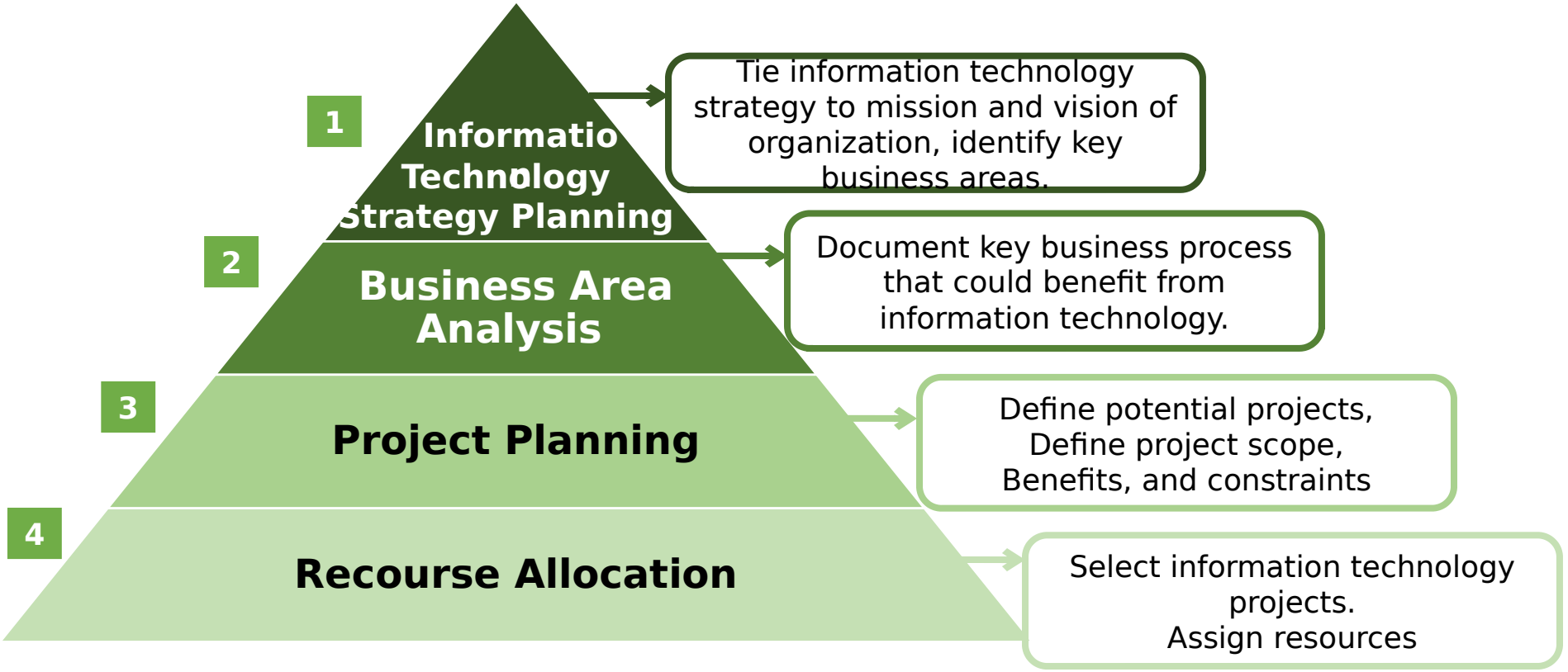


1- IDENTIFYING POTENTIAL PROJECTS

- The first step in project management is deciding what projects to do in the first place, therefore, project initiation starts with **identifying potential projects** then using **realistic methods** to **select** which projects to work on.
- Organization often follow a detailed process for project selection.

1- IDENTIFYING POTENTIAL PROJECTS

A four-stage process for selecting IT projects:



2- Use Realistic Methods to Select Projects

Three important criteria for selecting projects:

- There is **a need** for the project.

- There are **funds** available.
- There's a **strong will** to make the project succeed.

2- Use Realistic Methods to Select Projects

Methods for selecting projects include:

2.1 Focusing on broad organizational needs.

2.2 Categorizing information technology projects.

2.3 Performing financial analyses.

2.4 Using a weighted scoring model.

2- Use Realistic Methods to Select Projects: 2.1 Focusing on broad organizational needs

Projects that address **broad organizational needs** are much more likely to be **successful.**

Who is the responsible person?

Top Managers must focus on meeting their organization's many needs when deciding **what projects** to undertake, **when** to undertake them, and to **what level.**

2- Use Realistic Methods to Select Projects: 2.1 Focusing on broad organizational needs

For example, a broad organizational need might be:

- Improve safety

- Increase morale

- Provide better communications

- Improve customer service

2- Use Realistic Methods to Select Projects: 2.2 Categorizing IT Projects

One categorization is whether the project addresses:

- **A problem**, undesirable situations that prevent an organization from achieving its goals.
- **An opportunity**, chances to improve the organization.
- **A directive**, new requirements imposed by management, government, or some external

2- Use Realistic Methods to Select Projects: 2.2 Categorizing IT Projects

Another categorization is based on:

- The **time** it will take to complete a project
- The **date** by which it must be done.

Another is:

- The **overall priority** of the project, high, medium, or low priority based on the current business environment.

2- Use Realistic Methods to Select Projects: 2.3. Performing Financial Analysis

- Financial considerations are often an important consideration in selecting projects.
- Three **primary** methods for determining the projected financial value of projects:

  2.3.1 Net present value **(NPV) analysis**.

  2.3.2 Return on investment **(ROI).**

  2.3.3 Payback analysis.

2- Use Realistic Methods to Select Projects: 2.3. Performing Financial Analysis

2.3.1- Net Present Value (NPV)

Net present value (NPV) analysis is a method of calculating the expected net monetary gain or loss from a project by discounting all expected future cash inflows and outflows to the present point in time.

- Only projects with a **positive NPV** should be considered if financial value is a key criterion.
- **Positive NPV** means the return from project **exceeds** the cost of capital.
- The **higher the NPV**, the **better** project to select.

2- Use Realistic Methods to Select Projects: 2.3. Performing Financial Analysis

2.3.1- Net Present Value (NPV)

Steps to determine Net present value (NPV) :

1. Determine estimated **costs** and **benefits** for the life of the project and the products it produces.
2. Determine the **discount rate**. (A **discount rate** is the rate used in discounting future cash flow.)
3. Calculate the **NPV**

2.3.1- Net Present Value (NPV)

3. Calculate the **NPV** by:

- Using the built-in function in Microsoft Excel.
- Using mathematical formula for calculating NPV:

$$NPV = \sum_{t=0..n} A_t / (1 + r)^t$$

Where (t) equals the year of the cash flow.

(n) is the last year of the cash flow.

(A) is the amount of cash flow each year.

(r) is the discount rate.

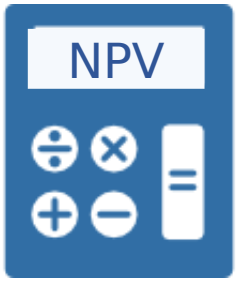
2- Use Realistic Methods to Select Projects: 2.3. Performing Financial Analysis

2.3.1- Net Present Value (NPV)

Steps to determine Net present value (NPV) :

Estimated Costs & Benefit

Discount Rate



Calculate NPV

$$NPV = \sum_{t=0}^{n} At / (1 + r)t$$

(t) equals the year of the cash flow.
(n) is the last year of the cash flow.
(A) is the amount of cash flow each year.
(r) is the discount rate.

2- Use Realistic Methods to Select Projects: 2.3. Performing Financial Analysis

2.3.1- Net Present Value (NPV) EXAMPLE

Discount rate **8%**

Project-1	Year 0	Year 1	Year 2	Year 3	Total
Benefits	$0	$2,000	$3,000	$4,000	
Project-2	**Year 0**	**Year 1**	**Year 2**	**Year 3**	**Total**
Benefits	$1,000	$2,000	$4,000	$4,000	
Costs	$2,000	$2,000	$2,000	$2,000	

2- Use Realistic Methods to Select Projects: 2.3. Performing Financial Analysis

2.3.1- Net Present Value (NPV) EXAMPLE

- Calculate Discount factor for each year.

Discount factor for each year = $\mathbf{1/(1+r)^t}$

Year 0 discount factor = $1 / (1 + 0.08)^0 =$ **1**

Year 1 discount factor = $1 / (1 + 0.08)^1 =$ **0.93**

Year 2 discount factor = $1 / (1 + 0.08)^2 =$ **0.86**

Year 3 discount factor = $1 / (1 + 0.08)^3 =$ **0.79**

2- Use Realistic Methods to Select Projects: 2.3. Performing Financial Analysis

2.3.1- Net Present Value (NPV) EXAMPLE

- Calculate discount costs and discount benefits for each project

Project-1	Year 0	Year 1	Year 2	Year 3	Total
Discount factor	1	0.93	0.86	0.79	
Benefits	$0	$2,000	$3,000	$4,000	
Discount benefits	$0	$1860	$2580	$3160	$7600
Costs	$5,000	$1,000	$1,000	$1,000	
Discount costs	$5000	$930	$860	$790	$7580

2- Use Realistic Methods to Select Projects: 2.3. Performing Financial Analysis

2.3.1- Net Present Value (NPV) EXAMPLE

- Calculate discount costs and discount benefits for each project.

Project-2	Year 0	Year 1	Year 2	Year 3	Total
Discount factor	1	0.93	0.86	0.79	
Benefits	$1,000	$2,000	$4,000	$4,000	
Discount benefits	**$1,000**	**$1860**	**$3440**	**$3160**	**$9460**
Costs	$2,000	$2,000	$2,000	$2,000	
Discount costs	**$2000**	**$1860**	**$1720**	**$1580**	**$7160**

2- Use Realistic Methods to Select Projects: 2.3. Performing Financial Analysis

2.3.1- Net Present Value (NPV) EXAMPLE

- Calculate NPV

Project 1 NPV = $7600 - $7580 = **$20**

Project 2 NPV = $9460 - $7160 = **$2300**

Which project we select and Why?

2- Use Realistic Methods to Select Projects: 2.3. Performing Financial Analysis

2.3.1- Net Present Value (NPV) EXAMPLE

Project 1 NPV = $7600 - $7580 = **$20**

Project 2 NPV = $9460 - $7160 = **$2300**

Which project we select and Why?

Project 2 because NPV value is greater than **Project 1**

2- Use Realistic Methods to Select Projects: 2.3. Performing Financial Analysis

2.3.2-Return on investment (ROI)

Return on investment (ROI) is calculated by subtracting the project total discount costs from the total discount benefits and then dividing by the total discount costs.

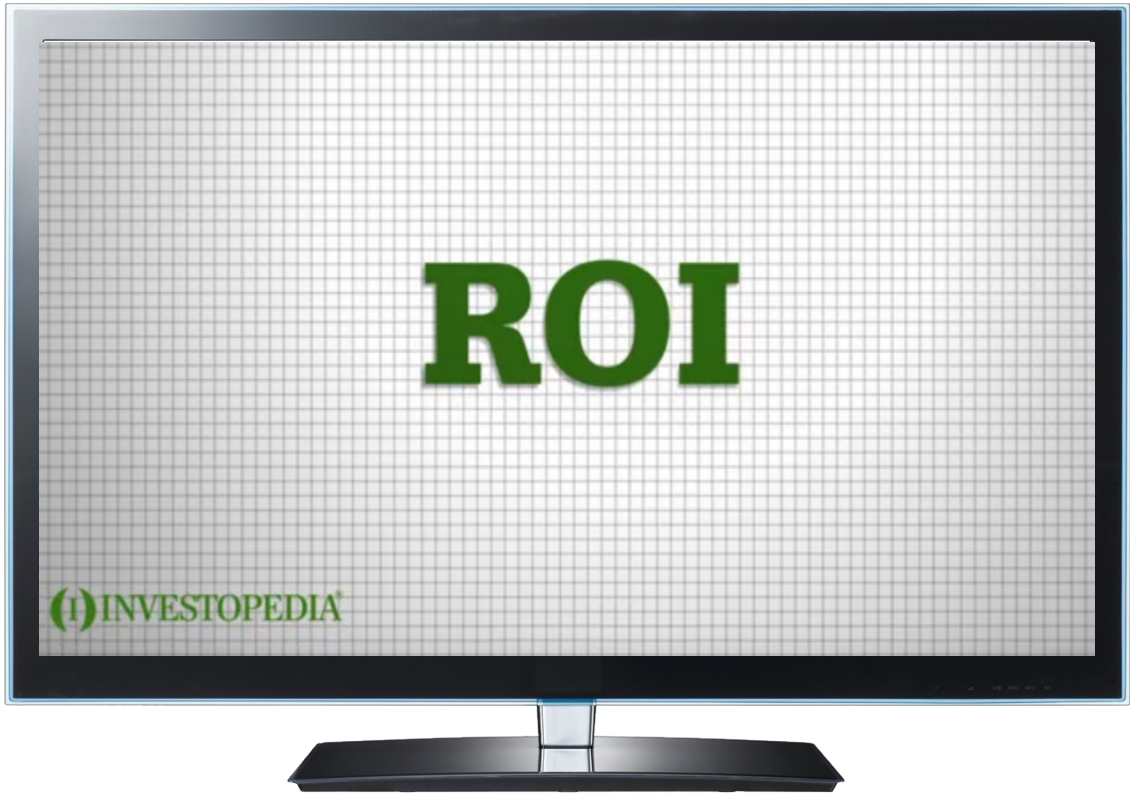
- Calculate the percentage of performance of an investment.

ROI = NPV / total discount costs

- The **higher the ROI** , the **better** project to select.

2- Use Realistic Methods to Select Projects: 2.3. Performing Financial Analysis

2.3.2-Return on investment (ROI)



2- Use Realistic Methods to Select Projects: 2.3. Performing Financial Analysis

2.3.2-Return on investment (ROI)

- Calculate ROI for the previous example

Project 1:

ROI = $20/ $7580 = 0.0026 **= 0.26%**

Project 2:

ROI = $2300 / $7160 = 0.32 = **32%**

Select **project 2**

2- Use Realistic Methods to Select Projects: 2.3. Performing Financial Analysis

2.3.3 Payback Analysis

- **Payback Analysis** is the amount of time investment takes to recover its initial cost.
- **Payback** occurs when the net cumulative discounted benefits equals the net cumulative discounted costs.

2- Use Realistic Methods to Select Projects: 2.3. Performing Financial Analysis

2.3.3 Payback Analysis

- Track the net cash flow across each year to determine the year that net discounted benefits overtake net discounted costs. **[cash flow = discount benefits – discount costs]**
- Many organizations want IT projects to have a fairly **short payback period** (< 1 year).

2- Use Realistic Methods to Select Projects: 2.3. Performing Financial Analysis

2.3.3 Payback Analysis Example 1

Year	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Net cash flow Project 1	($120,000)	($160,000)	($135,000)	($65,000)	$65,000	$145,000
Net cash flow Project 2	($75,000)	($80,000)	($10,000)	$35,000	$65,000	$70,000

- Project 1 payback occurs sometime during **year 4**
- Project 2 payback occurs sometime during **year 3**

Notes:

- Some numbers in the table surrounded with braces which mean **negative number.**
- Negative numbers mean **loss**, and Positive numbers mean **gain**.

2- Use Realistic Methods to Select Projects: 2.3. Performing Financial Analysis

2.3.3 Payback Analysis Example 2: Steps to perform payback analysis

Perform payback analysis for the previous example?

Project-1	Year 0	Year 1	Year 2	Year 3	Total
Discount benefits	$0	$1860	$2580	$3160	$7600
Discount costs	$5,000	$930	$860	$790	$7580
Cash flow	($5,000)	$930	$1720	$2370	$20
Net cash flow					

2- Use Realistic Methods to Select Projects: 2.3. Performing Financial Analysis

2.3.3 Payback Analysis Example 2: Steps to perform payback analysis

Payback year

Project-1	Year 0	Year 1	Year 2	Year 3	Total
Discount benefits	$0	$1860	$2580	$3160	$7600
Discount costs	$5,000	$930	$860	$790	$7580
Cash flow	($5,000)	$930	$1720	$2370	$20
Net cash flow	($5,000)	($4070)	($2350)	**$20**	

2- Use Realistic Methods to Select Projects: 2.3. Performing Financial Analysis

2.3.3 Payback Analysis Example 2: Steps to perform payback analysis

Payback year

Project-2	Year 0	Year 1	Year 2	Year 3	Total
Discount benefits	$1,000	$1860	$3440	$3160	$9460
Discount costs	$2,000	$1860	$1720	$1580	$7160
Cash flow	($1,000)	$0	$1720	$1580	$2,300
Net cash flow	($1,000)	($1,000)	**$720**		

Project 1 payback occurs sometime during year 3, project 2 payback occurs sometime during year 2, so **project 2** will be selected.

2- Use Realistic Methods to Select Projects: 2.3. Performing Financial Analysis

2.3.3 Payback Analysis Example 2: Steps to perform payback analysis

Q: What if **payback** occurs on the **same year** for both projects. Which project will you choose?

A: The project with **HIGHER net cashflow** will be selected.

2- Use Realistic Methods to Select Projects: 2.3. Performing Financial Analysis

2.3.3 Payback Analysis Example 2: Steps to perform payback analysis

Project-1	Year 0	Year 1	Year 2	Year 3	Total
Discount benefits	$0	$1860	$2580	$3160	$7600
Discount costs	$5,000	$930	$860	$790	$7580
Cash flow	($5,000)	$930	$1720	$2370	$20

Project-2	Year 0	Year 1	Year 2	Year 3	Total
Discount benefits	$1,000	$1860	$2440	$3160	$8460
Discount costs	$2,000	$1860	$1720	$1580	$7160
Cash flow	($1,000)	$0	$720	$1580	$1,300
Net cash flow	($1,000)	($1,000)	($280)	**$1300**	

Project 2

2- Use Realistic Methods to Select Projects: 2.4 Using Weighted Scoring Model (WSM)

A weighted scoring model (WSM) is a tool that provides a systematic process for selecting projects based on many criteria.

2- Use Realistic Methods to Select Projects: 2.4 Using Weighted Scoring Model (WSM)

Some criteria can include factors such as:

- Meeting broad organizational needs;
- Addressing problems, opportunities, or directives.
- The amount of time needed to complete the project
- The overall priority of the project
- Projected financial performance of the project.

2- Use Realistic Methods to Select Projects: 2.4 Using Weighted Scoring Model (WSM)

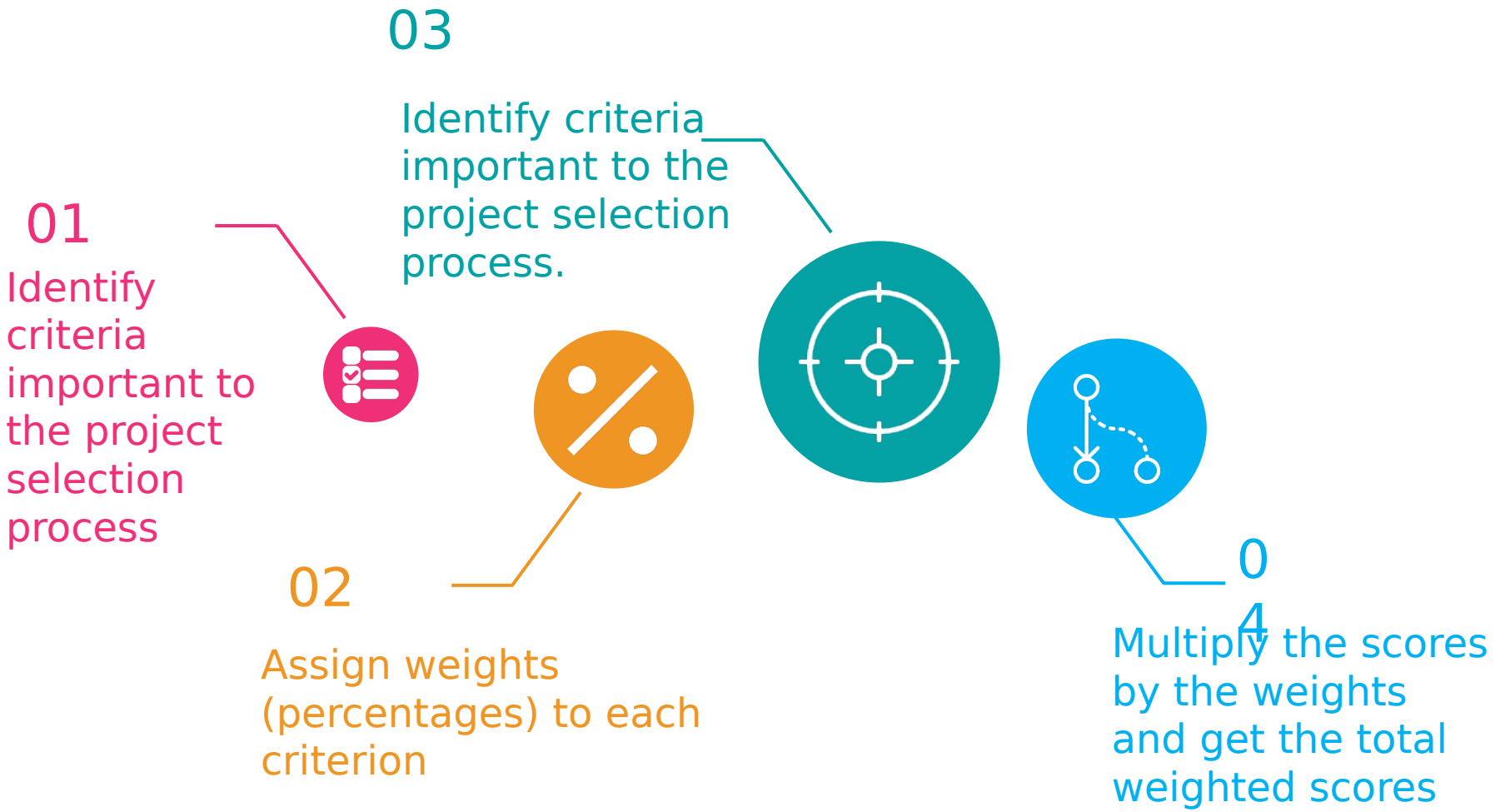
2- Use Realistic Methods to Select Projects: 2.4 Using Weighted Scoring Model (WSM)

Process to create WSM:

1. Identify criteria important to the project selection process.
2. Assign weights (percentages) to each criterion so they add up to 100%. requires consultation and final agreement
3. Assign scores to each criterion for each project. The scores indicate how much each project meets each criterion
4. Multiply the scores by the weights and get the total weighted scores.

The **higher** the **weighted score**, the **better project to select**.

2- Use Realistic Methods to Select Projects: 2.4 Using Weighted Scoring Model (WSM)



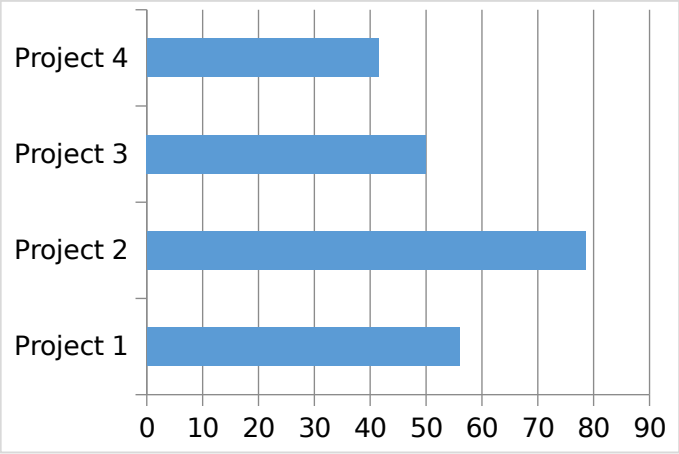
2- Use Realistic Methods to Select Projects: 2.4 Using Weighted Scoring Model (WSM)

Possible criteria for IT projects include:

- Supports key business objectives
- Has strong internal sponsor
- Has strong customer support
- Uses realistic level of technology
- Can be implemented in one year or less
- Provides positive NPV
- Has low risk in meeting scope, time, and cost goals

2- Use Realistic Methods to Select Projects: 2.4 Using Weighted Scoring Model (WSM)

Example 1



Example 1					
Criteria	**Weight**	**Project 1**	**Project 2**	**Project 3**	**Project 4**
Supported Key business objectives	25%	90	90	50	20
Has strong internal sponsor	15%	70	90	50	20
Has strong Customer support	15%	50	90	50	20
Uses realistic level of technology	10%	25	90	50	70
Can be implemented in one year or less	5%	20	20	50	90
Provides positive NPV	20%	50	70	50	50
Has low risk in meeting scope, time, and coast goals	10%	20	50	50	90
Weighted Project Score	**100%**	**56**	**78.5**	**50**	**41.5**

2- Use Realistic Methods to Select Projects: 2.4 Using Weighted Scoring Model (WSM)

Example 2

Example 2					
Criteria	**Weight**	**Project 1**	**Project 2**	**Project 3**	**Project 4**
Market share effect	10%	70	70	50	30
Competition	5%	30	70	70	70
Risk	10%	10	30	50	30
Product fit	5%	70	70	50	0
Strategic plan alignment	15%	50	50	70	30
Customer Support	20%	50	50	30	30
Payback	10%	70	70	30	10
NPV	15%	70	50	30	30
ROI	10%	50	50	30	10
Total	**100%**	**53**			

0.1 70 = 7
0.05 30 = 1.5
0.1 10 = 1
0.05 70 = 3.5
0.15 50 = 7.5
0.2 50 = 10
0.1 70 = 7
0.15 70 = 10.5
0.1 50 = 5

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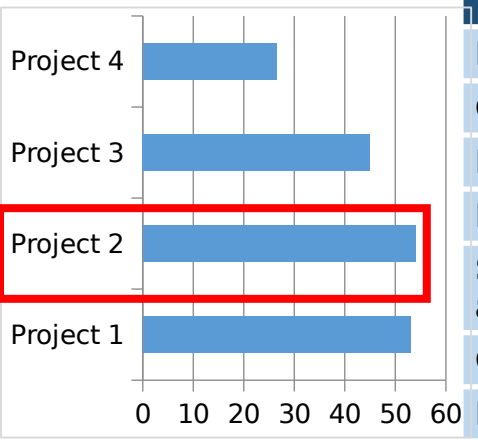
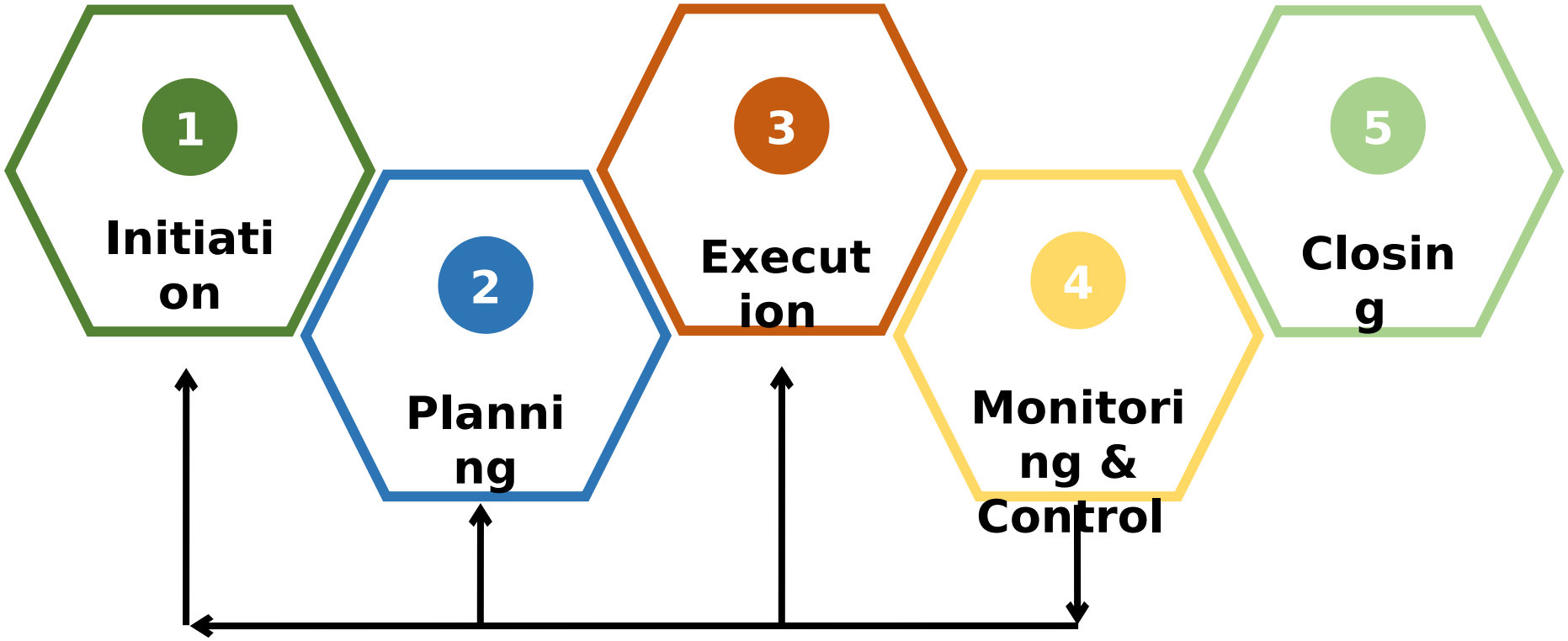


Example 2					
Criteria	Weight	Project 1	Project 2	Project 3	Project 4
Market share effect	10%	70	70	50	30
Competition	5%	30	70	70	70
Risk	10%	10	30	50	30
Product fit	5%	70	70	50	0
Strategic plan alignment	15%	50	50	70	30
Customer Support	20%	50	50	30	30
Payback	10%	70	70	30	10
NPV	15%	70	50	30	30
ROI	10%	50	50	30	10
Total	**100%**	**53**	**54**	**45**	**26.5**

Knowledge Area	Project Management Process Groups				
	Initiating	Planning	Executing	Monitoring & Control	Closing
Project Integration Management	Develop project charter	Develop project management plan	Direct and manage project work	Monitor and control project work, perform integrated change control	Close project or phase


1
Initiation
2
Planning
3
Execution
4
Monitoring & Control
5
Closing

1st Process: Developing The Project Charter

Initiating
Process: **Develop project charter**
Output: Project charter

Planning
Process: **Develop project management plan**
Output: Project management plan

Executing
Process: **Direct and manage project work**
Outputs: Deliverables, work performance data, change requests, project management plan updates, project documents updates

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Closing
Process: **Close project or phase**
Outputs: Final product, service, or result transition; organizational process assets updates

Project Start → **Project Finish**

Knowledge Area	Tools & Technique	Super Tools
Integration management	Project selection methods Project management methodologies Stakeholder analyses Work requests Project charters Project management plans Change control boards Project review meetings	Project management software Change requests Lesson-learned reports

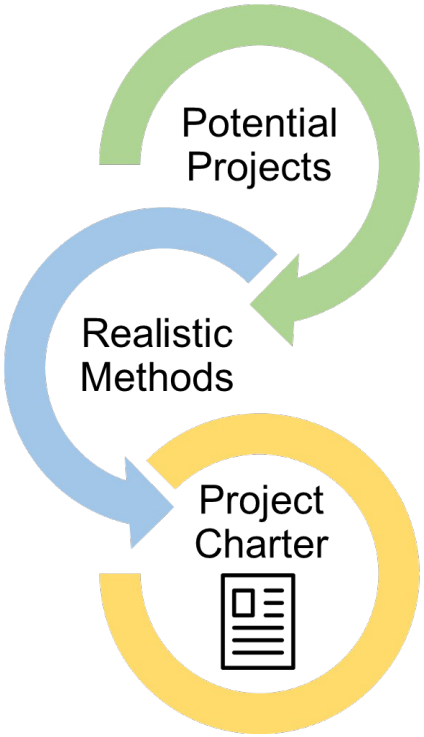
*

1st Process: Developing The Project Charter

- **Develop Project Charter** is the process of developing a document that formally authorizes the existence of a project and provides the project manager with the authority to apply organizational resources to project activities.

- After deciding what project to work on, it is important to let the rest of the organization know by creating and distributing documentation to authorize project initiation.

- Example of documentation is a **project charter**.



1st Process: Developing The Project Charter

- **A Project Charter** is a document that formally authorizes the work to begin on a project and provides an overview of objectives and resource requirements.

- Key project stakeholders should sign a project charter to acknowledge agreement on the need and intent of the project.

- A project charter is a key output of the initiation process

*

1st Process: Developing The Project Charter

Basic information must be included in a project charter:

- The **project titles** and **date** of authorization.
- The **project manager's name** and **contact information.**
- A summary **schedule**.
- A summary of the project **objectives**.
- Project **success criteria**.
- A summary of the **planned approach for managing the project.**
- A **role and responsibilities matrix**.
- A **sign-off** section for signatures of key project stakeholders.
- A **comments** section.

1st Process: Developing The Project Charter

1st Process: Developing The Project Charter: Sample Project Charter

Project Title: Information Technology (IT) Upgrade Project

Project Start Date: March 4 **Projected Finish Date:** December 4

Key Schedule Milestones:
- Inventory update completed April 15
- Hardware and software acquired August 1
- Installation completed October 1
- Testing completed November 15

Budget Information: Budgeted $1,000,000 for hardware and software costs and $500,000 for labor costs.

Project Manager: Kim Nguyen, (310) 555–2784, knguyen@course.com

Project Objectives: Upgrade hardware and software for all employees (approximately 2,000) within nine months based on new corporate standards. See attached sheet describing the new standards. Upgrades may affect servers as well as associated network hardware and software.

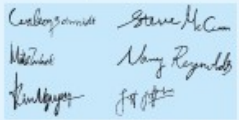
Main Project Success Criteria: The hardware, software, and network upgrades must meet all written specifications, be thoroughly tested, and be completed in nine months. Employee work disruptions will be minimal.

Approach:
- Update the IT inventory database to determine upgrade needs
- Develop detailed cost estimate for project and report to CIO
- Issue a request for quote to obtain hardware and software
- Use internal staff as much as possible for planning, analysis, and installation

ROLES AND RESPONSIBILITIES

Name	Role	Responsibility
Walter Schmidt	CEO	Project sponsor, monitor project
Mike Zwack	CIO	Monitor project, provide staff
Kim Nguyen	Project Manager	Plan and execute project
Jeff Johnson	Director of IT Operations	Mentor Kim
Nancy Reynolds	VP, Human Resources	Provide staff, issue memo to all employees about project
Steve McCann	Director of Purchasing	Assist in purchasing hardware and software

Sign-off: (Signatures of all the above stakeholders)

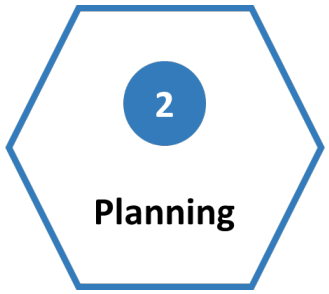


Comments: (Handwritten or typed comments from above stakeholders, if applicable)

"This project must be done within 10 months at the absolute latest." Mike Zwack, CIO

"We are assuming that adequate staff will be available and committed to supporting this project. Some work must be done after hours to avoid work disruptions, and overtime will be provided." Jeff Johnson and Kim Nguyen, IT department

Developing Project Management Plan Process



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Closing
Process: **Close project or phase**
Outputs: Final product, service, or result transition; organizational process assets updates

Project Start → **Project Finish**

Knowledge Area	Project Management Process Groups				
	Initiating	Planning	Executing	Monitoring & Control	Closing
Project Integration Management	Develop project charter	Develop project management plan	Direct and manage project work	Monitor and control project work, perform integrated change control	Close project or phase

Developing Project Management Plan Process

- **Develop Project Management Plan** is the process of defining, preparing, and coordinating all plan components and consolidating them into an integrated project management plan.
- A **project management plan** is a document used to coordinate all project planning documents and help guide a project's execution and control.
- Project management plans should be **dynamic**, **flexible**, and **subject to change** when the environment or project changes.

*

Project Integration Management

(2) Develop Project Management Plan

*

Developing Project Management Plan Process

Input:

- Project charter
- Enterprise environmental factors
- Organizational process assets

Tool and technique: Expert judgment

Developing Project Management Plan Process

Enterprise Environmental Factors:

Conditions that **are not under the control of the project team**, that influence, constrain or direct the project. Are inputs to most planning processes.

Examples:

Organizational culture, structure, and governance
Government or Industry standards
Political climate
Marketplace conditions

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Developing Project Management Plan Process

- **Organizational process assets** (OPAs) are the plans, processes, policies, procedures, and knowledge bases specific to and used by the performing organization. These assets influence the management of the project.
  - OPAs are inputs to many project management processes.
  - Since OPAs are internal to the organization, the project team members may be able to update and add to the organizational process assets as necessary throughout the project.

According to the Guide to the Project Management Body of Knowledge (PMBOK® Guide), Jan 21, 2014

*

Organizational process assets categories:

1) Processes, policies, and procedures:

- The assets are not updated as part of the project work.
- They are usually established by the project management office or another function outside of the project.
- These can be updated only by following the appropriate organizational policies associated with updating processes, policies, or procedures.
- The project management team should tailor those assets to meet the needs of the project.

*

Organizational process assets categories:

2) Organizational knowledge bases:

- The assets are updated throughout the project with project information.
- For example, information on financial performance, lessons learned, performance metrics and issues, and defects are continually updated throughout the project.

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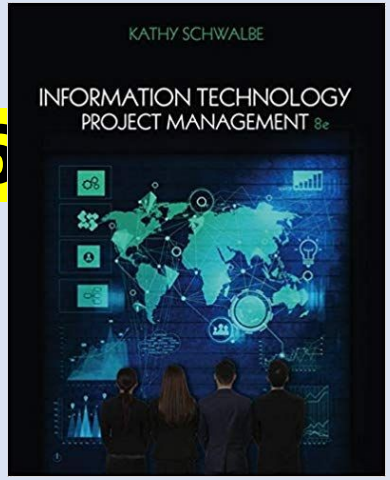
Developing Project Management Plan Process: Content of Project Management Plan

Read textbook **page 158-16**



Directing & Managing Project Work

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Directing & Managing Project Work

Direct and Manage Project Work is the process of leading and performing the work defined in the project management plan and implementing approved changes to achieve the project's objectives.

Input:

- Project management plan
- Approved change requests
- Enterprise environmental factors
- Organizational process assets

*

Project Integration Management

(3) Direct and Manage Project Work

*

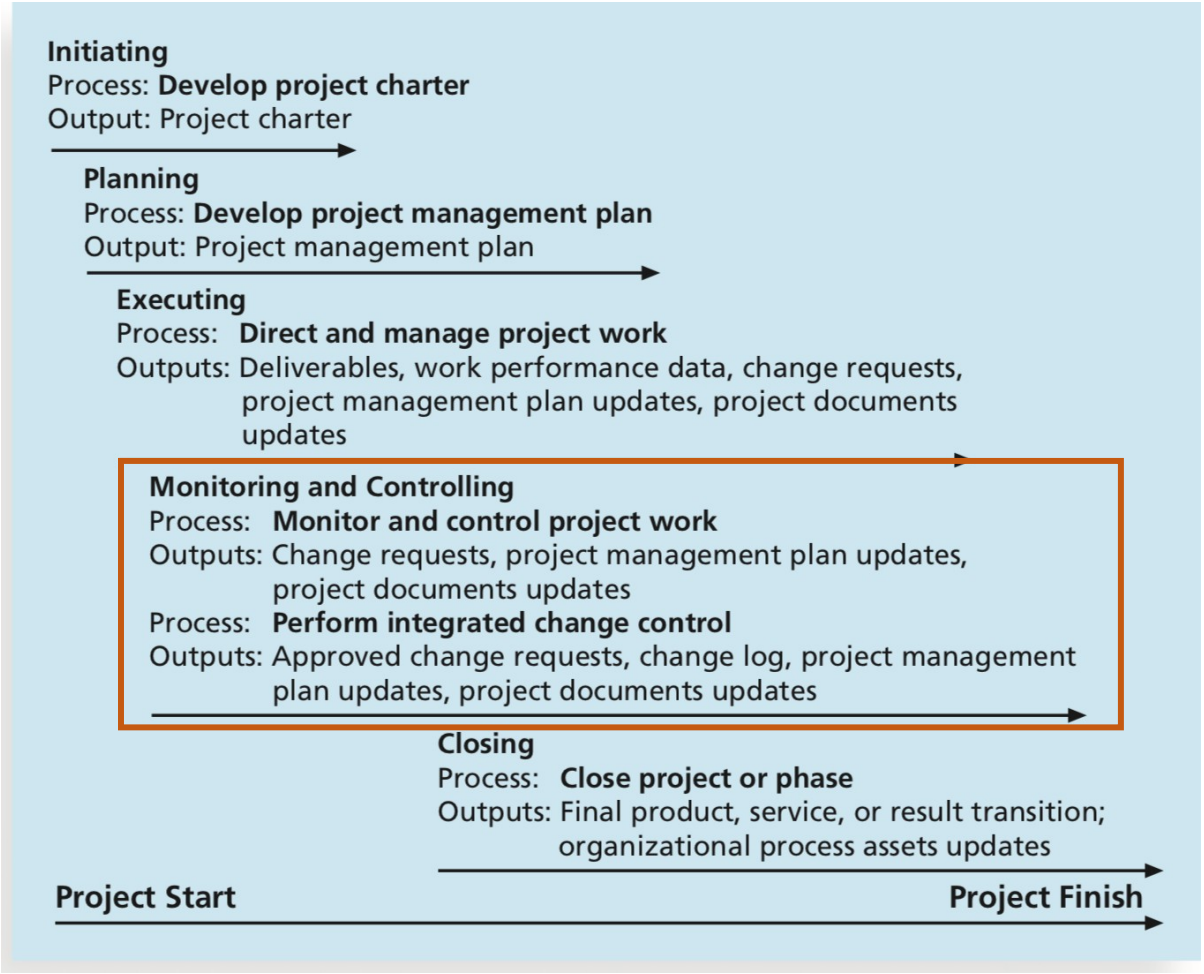
Tools and techniques:

- Expert judgment
- Meetings
- Project management information systems

Outputs:

- Deliverables
- Work performance data
- Change requests
- Project management plan updates
- Project documents updates

Monitoring & Controlling Processes



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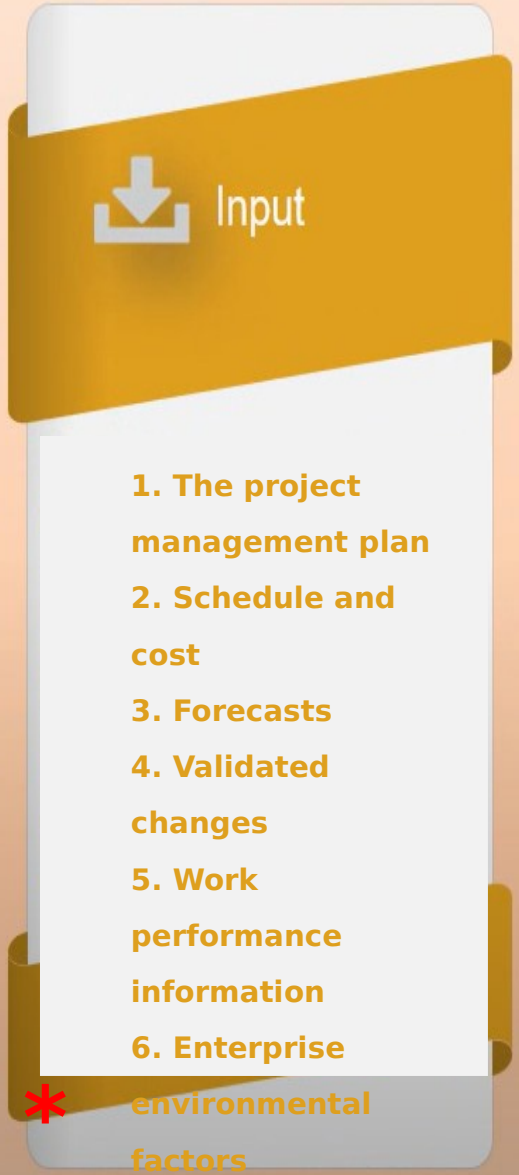
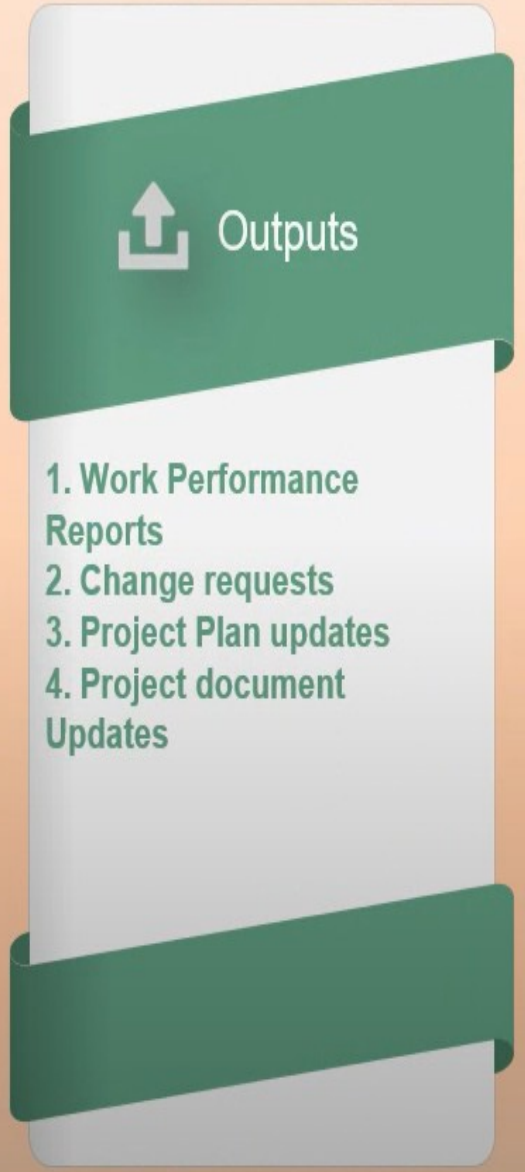
Monitoring & Controlling Project Work Process

- **Monitor and Control Project Work** is the process of tracking, reviewing, and reporting overall progress to meet the performance objectives defined in the project management plan.
- Collecting, measuring and disseminating performance information.
- Assessing measurements and analyzing trends to determine what process improvements can be made.

*

(5) Monitor and Control Project Work





Work performance data
بيانات أداء العمل

- Raw observations and measurements.

Ex:

- Start and finish dates.
- work that was performed
- Number of change requests.
- Number of defects.
- Actual costs, Actual durations.
- Resources used.

Work performance information
معلومات أداء العمل

- Analyzed Work Performance Data
- Status of deliverables.
- Implementation status for change requests.
- Forecast estimates to complete.

Work performance reports
تقارير أداء العمل

- Status reports.
- Memos, justifications.
- Electronic dashboards.
- Recommendations
- Help Stakeholders Make Decisions

*

Monitoring & Controlling Project Work Process

Inputs:

- The project management plan
- Schedule and cost
- Forecasts
- Validated changes
- Work performance information
- Enterprise environmental factors
- Organizational process assets

Outputs:

- Change requests
- Work performance report

Performing Integrated Change Control Process

Perform Integrated Change Control is the process of reviewing all change requests; approving changes and managing changes to deliverables, organizational process assets, project documents, and the project management plan; and communicating the decisions throughout the project life cycle.

*

Performing Integrated Change Control Process

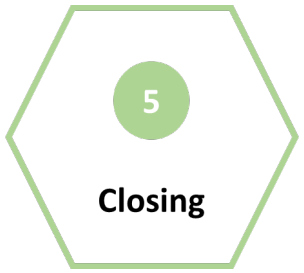
Inputs:

- Project management plan
- Work performance report
- Change requests
- Enterprise environmental factors
- Organizational process assets

Outputs:

- Approved change requests
- A change log
- Updates to the project management plan
- Updates to project documents

Close Project or Phase Process



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Close Project or Phase Process

Close Project or Phase is the process of finalizing all activities for the project, phase, or contract, and transfer the completed or cancelled work to appropriate people.

Inputs:

- Project management plan
- Accepted deliverables
- Organizational process assets

Outputs:

- Final product, services or result transition.
- Organizational process asset updates

- When a project has a change in scope, the project manager may run the risk of resource shortages, budget overruns, and delays. **Project integration management allows the manager to:**
  - Assess the situation prudently and make effective decisions accordingly to keep the project goals on track.
  - Reorganize teams and redistribute resources to minimize impact to the project and business.

*

The table shown below lists the cash flow of two projects.

1. Find the **NPV**, **ROI and** Payback.
2. Which project should be selected, and **why?**

	Year0	Year1	Year2	Year3	Year4
Discount Rate = 0.08					
Project1					
Costs	$120,000	$100,000	$75,000	$50,000	$50,000
Benefits	$0	$60,000	$100,000	$120,000	$180,000
Project2					
Costs	$75,000	$90,000	$30,000	$30,000	$20,000
Benefits	$0	$85,000	$100,000	$75,000	$50,000

The following table describes four projects in terms the scores in a set of evaluation criteria.

1. Find the **WSM** for each project.
2. Which project should be selected?

Criteria	Weight	Project A	Project B	Project C	Project D
Support Key business objectives	0.3	9	3	3	2
Has strong internal sponsor	0.4	3	8	2	1
Has strong customer support	0.1	5	2	4	8
Can be implemented in one year or less	0.2	2	6	1	2
Totals	100%				

- Schwalbe, K. Information Technology Project Management (8th Edition). **Chapter 4.**